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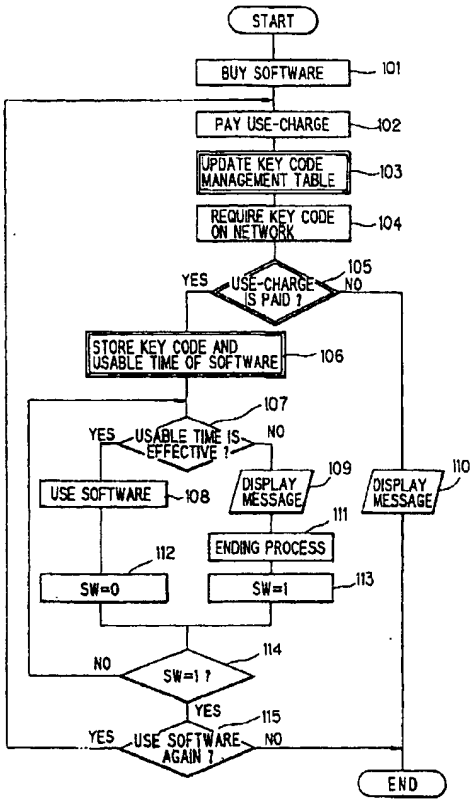
(54) Method of managing software by transmitted data on network

(57) An user buys a software having a product code stored in a CD-ROM. An use-charge of the software is paid. The use-charge is determined by the user in correspondence with an use frequency of the software before the software is used. When the use-charge of the software is paid, the key code management table in a host computer are updated. The user's computer is connected with the host computer on a network, then the user gets an usable time and a key code of the software. Thus, the user can use the software within the usable time corresponding with the use-charge. Therefore, the use-charge and a public network fee can be collected reliably.

FIG. 1



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Description

The invention relates to a method of managing a software, and more particularly, to a method of managing a software by transmitted data on a network, the data is processed in a computer system such as a home game apparatus or a personal computer (PC) by said software.

A conventional home game apparatus comprises a game unit and a ROM cartridge. The game unit has a CPU (Central Processing Unit), a RAM (Random Access Memory), a ROM (Read-Only Memory), I/O (Input/Output) interfaces, and a timer. The ROM cartridge has an I/O interface and a ROM. The game unit and the ROM cartridge are connected with each other through the each I/O interface.

Now, a home game apparatus includes a communication unit such as a card type modem and a RTC (Real Time Clock). The home game apparatus can be connected with a network by the card type modem. Further, an use time of a computer game can be calculated by the RTC, because the RTC is an IC (Integrated Circuit) having a clock function and a calendar function.

A computer game program may be provided as data stored in a ROM cartridge or a CD-ROM. A user buys the ROM cartridge or the CD-ROM which includes a computer game program. The user plays the computer game stored in the ROM cartridge or the CD-ROM. Further, a computer game program may be provided as data on a network. A user may buy the computer game program on the network by using the card type modem. Then, the computer game may be played on the network by the card type modem.

On the other hand, a PC (Personal Computer) generally includes a CPU, a RAM, a ROM, I/O interfaces, a floppy disk unit, a CD-ROM drive, a time/clock function, and a modem. Then, an use time of a software can be calculated by the time/clock function. The PC can be connected with a network by the modem.

A software such as an operation program or a computer game program may be provided as data stored in a CD-ROM or floppy disks. A user buys the CD-ROM or the floppy disks which includes the software. The user uses the software stored in the CD-ROM or floppy disks. Further, when the PC can be connected with a network by the modem, a software may be provided as data on the network. The software can be bought online on the network and then downloaded online into the PC on the network.

In the conventional method of managing a software on a network, generally, a purchase price or an use-charge of a software is collected with a public network fee. A data provider (a sender) sends an user (a receiver) data such as an accounting code of a software. Then, the user can use the software by the received data. When the user uses the software, a software use frequency, called generally a data use frequency, is stored with the accounting code. Then, the data provider collects a data (software) use-charge and a public network fee in correspondence with the data use frequency and the accounting code.

In the conventional method of managing a software on a network, however, there are disadvantages in that a data use-charge and a public network fee may not be collected because the data use-charge and the public network fee are paid after an user used the data and the network, and data such as a software or a computer game program can not rent with a term of a lease thereof on a network because the data is owned by a user if once the user downloads the data on the network.

Accordingly, it is an object of the invention to provide a method of managing a software by transmitted data on a network in which a data use-charge and a public network fee can be collected reliably.

Accordingly, it is another object of the invention to provide a method of managing a software by transmitted data on a network in which the software such as an operation program or a computer game can rent with a term of a lease thereof on the network.

According to the feature of the invention, a method of managing a software by transmitted data on a network between a host computer and one or more personal computers comprises the steps of loading a software into a personal computer, the software includes a main program, a communication program for transmitting data on the network between the host computer and the personal computer, and a time managing program for managing an usable time of the main program, requiring the usable time and a key code for operating the main program from the personal computer to the host computer by the communication program, receiving the key code and the usable time by the communication program, operating the main program within the usable time by using the key code, and managing the usable time of the main program by the time managing program.

The invention will be described in more detail in conjunction with the accompanying drawings, wherein:

FIG. 1 is a flow chart of processing a method of managing a software by transmitted data on a network of the present invention;

FIG. 2 is a block diagram of a key code management table in a host computer of the present invention;

FIG. 3 is a block diagram of a home game apparatus of the present invention;

FIG. 4 is a flow chart of a process of a time management program; and

FIG. 5 is a block diagram of a file in a CD-ROM used in FIG. 4.

Before explaining a method of managing a software by transmitted data on a network in the preferred embodiment according to the invention, the above mentioned conventional method of managing a software on network will be explained.

A conventional home game apparatus comprises a game unit and a ROM cartridge. The game unit has a CPU (Central Processing Unit) for processing a program of a computer game and an operation system, a RAM (Random Access Memory) for storing the program of the computer game, a ROM (Read-Only Memory) for storing the operation system, I/O (Input/Output) interfaces for connecting with the ROM cartridge and a home-television, and a timer for calculating an elapsed time of the computer game. The ROM cartridge has an I/O interface for connecting with the game unit, and a ROM for storing the program of the computer game. The game unit and the ROM cartridge are connected with each other through the each I/O interface.

Now, a home game apparatus includes a communication unit such as a card type modem and a RTC (Real Time Clock). The home game apparatus can be connected with a network by the card type modem which can be included therein. Further, an use time of a computer game can be calculated by the RTC, because the RTC is an IC (Integrated Circuit) having a clock function and a calendar function. Namely, the RTC calculates year, month, day, day of the week, hour, minute, and second of the time of the computer game by using the clock function and the calendar function.

A computer game program may be provided as data stored in a ROM cartridge or a CD-ROM. A user buys the ROM cartridge or the CD-ROM which includes a computer game program. The user plays the computer game stored in the ROM cartridge or the CD-ROM. Further, a computer game program may be provided as data on a network. A user may buy the computer game program on the network by using the card type modem. Then, the computer game may be played online on the network by the card type modem.

On the other hand, a PC (Personal Computer) generally includes a CPU for processing a software, a RAM (Random Access Memory) for storing the software, a ROM (Read-Only Memory) for storing an operation system, I/O (Input/Output) interfaces for connecting with external units, a floppy disk unit for driving a floppy disk including data such as a software, a CD-ROM (Compact Disk Read-Only Memory) drive for driving a CD-ROM including data such as a software, a time/clock function for controlling time of a hardware and a software in the PC, and a modem for connecting with network and communicating with other computers on the network. Then, an use time of data such as a software can be calculated by the time/clock function.

A software such as an operation program or a computer game program may be provided as data stored in a CD-ROM or floppy disks. A user buys the CD-ROM or the floppy disks which includes the software. The user uses the software stored in the CD-ROM or floppy disks. Further, when the PC can be connected with a network by the modem, a software may be provided as data on the network. The software can be bought online on the network and then downloaded online into the PC on the network.

In the conventional method of managing a software on a network, generally, a purchase price or an use-charge of data such as a software is collected with a public network fee. For example, in an information communication network, a data provider (a sender) sends an user (a receiver) data such as an accounting code of a software. Then, the user can use the software by the received data. When the user uses the software, a software use frequency, called generally a data use frequency, is stored with the accounting code. Then, the data provider collects a data (software) use-charge and a public network fee in correspondence with the data use frequency and the accounting code.

In the conventional method of managing a software on a network, however, there are disadvantages in that a data use-charge and a public network fee may not be collected because the data use-charge and the public network fee are paid after an user used the data and the network, and data such as a software or a computer game program can not rent with a term of a lease thereof on a network because the data is owned by a user if once the user downloads the data on the network.

Therefore, it is need to provide a method of managing a software on a network in which a data use-charge and a public network fee can be collected reliably, and data such as a software can rent with a term of a lease thereof on the network.

Next, a method of managing a software by transmitted data on a network in the first preferred embodiment according to the invention will be explained in FIGS. 1 and 2.

FIG. 1 is a flow chart of processing a method of managing a software by transmitted data on a network of the present invention. In FIG. 1, an user may buy a software including a product code stored in a CD-ROM, floppy disks, or a ROM cartridge at the step 101. Further, the user may buy a software including a product code on a network. Then, an use-charge of the software is paid at the step 102. The use-charge is determined by the user in correspondence with an use frequency of the software before the software is used. When the use-charge of the software is paid, the product code must be informed a software provider (a host computer center).

The host computer has a key code management table. FIG. 2 is a block diagram of a key code management table in a host computer of the present invention. The key code management table includes fields of a product code, a sending sign, a paid use-charge, a paying date, a sending date, and other. When the use-charge of the software and the product code are received by the host computer, the field of the sending sign in the key code management table is cleared, and, at the same time, the fields of the product code, the paid use-charge and the paying date in the key code management table are updated at the step 103 in FIG. 1. In this case, a password may be added to the product code.

can be calculated by the time/clock function.

A software such as a computer game is provided as data stored in a CD-ROM. In this case, the usable time and the key code of the software is controlled by a time management program which is included in the CD-ROM (the software). FIG. 4 is a flow chart of a process of a time management program. FIG. 5 is a block diagram of a file in a CD-ROM used in FIG. 4.

In FIG. 4, a menu of computer games is displayed on a display unit at the step 401. One of the computer games is selected by an user at the step 402. At the step 403, a key code of the selected computer game is checked. If the key code dose not exist, the message of "NO KEY CODE" is displayed at the step 404, then the step 401 returns. If the key code exists, an usable time of the computer game is displayed on the display unit at the step 405. At the step 406, the user selects whether the computer game is played or not. If the user selects the playing game, the computer game is played at the step 407. During playing the computer game, the remainder usable time is checked on a predetermined cycle at the step 408. At the step 409,if the remainder usable time is more than "10 minutes", the step 416 follows. If the remainder usable time is less than "10 minutes", the step 410 follows. At the step 410, if the remainder usable time is less than "0", the message of "TIME IS OVER" is displayed on the display unit at the step 411. Then, the ending process of the computer game is executed at the step 412. At the ending process, the data of the computer game such as a status of a game character is saved. The key code of the computer game is deleted automatically by the time management program at the step 413. If the remainder usable time is more than "0" at the step 410, the remainder usable time is displayed on the display unit during playing the computer game at the step 414. Next, the remainder usable time is updated at the step 415. The steps 407 to 415 are repeated until the user stops the computer game at the step 416 or the remainder usable time becomes less than "0" at the step 410. If the user stops the computer game at the step 416, the remainder usable time is updated as a new usable time at the step 417. Next, the new usable time is displayed on the display unit at the step 418, then the time management process is ended.

Therefore, a data use-charge and a public network fee can be collected reliably. Further, a software such as a computer game can rent with a term of a lease thereof on a network.

As this invention may be embodied in several forms without departing from the sprit of essential characteristics thereof, the present embodiment is therefore illustrative and not restrictive, since the scope of the invention is defined by the appended claims rather than by the description proceeding them, and all changes that fall within meets and bounds of the claims, or equivalence of such meets and bounds are therefore intended to embraced by the claims.

Claims

1. A method of managing software by transmitted data on a network between a host computer and one or more personal computers the method comprising the steps of:

   loading software into a personal computer, said software including a main program, a communication program for transmitting data on said network between said host computer and said personal computer, and a time managing program for managing the usable time of said main program;
   requesting usable time data and a key code for operating said main program from said personal computer to said host computer by employing said communication program;
   receiving said key code and said usable time data by employing said communication program;
   operating said main program within said usable time by using said key code; and
   managing said usable time of said main program by employing said time managing program.

2. The method of claim 1, wherein said managing step comprises the steps of:

   calculating the remaining usable time; and
   displaying the remaining usable time.

3. The method of claim 2, said managing step further comprising the steps of:

   determining if said remainder of said usable time is less than zero, and, if usable time is less than zero;
   saving data relating to said main program in a storage; and
   deleting said key code of said main program from said personal computer.

FIG. 1

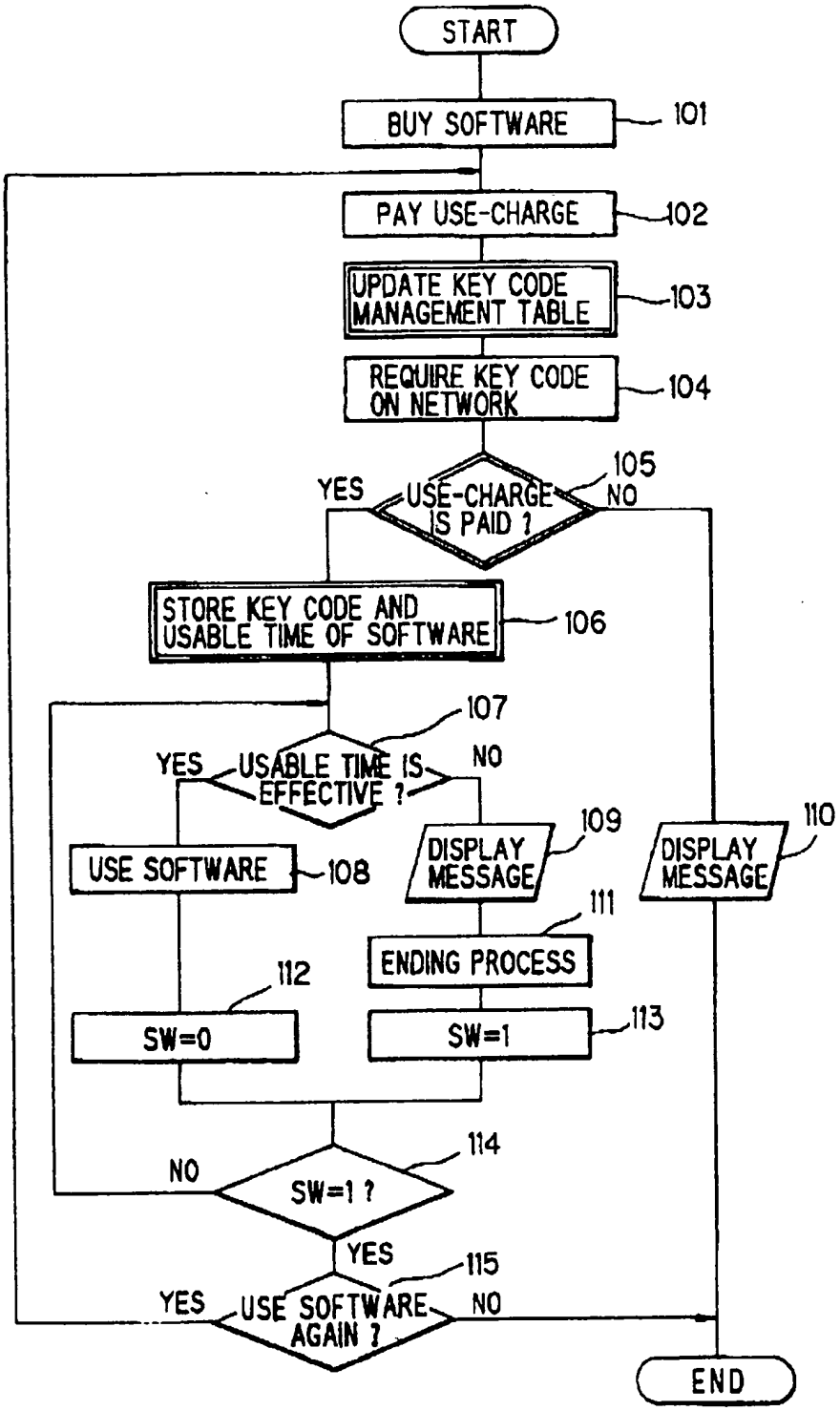

START
BUY SOFTWARE
101
PAY USE-CHARGE
102
UPDATE KEY CODE MANAGEMENT TABLE
103
REQUIRE KEY CODE ON NETWORK
104
USE-CHARGE IS PAID ?
105
YES
NO
STORE KEY CODE AND USABLE TIME OF SOFTWARE
106
USABLE TIME IS EFFECTIVE ?
107
YES
NO
USE SOFTWARE
108
DISPLAY MESSAGE
109
DISPLAY MESSAGE
110
ENDING PROCESS
111
SW=0
112
SW=1
113
SW=1 ?
114
NO
YES
USE SOFTWARE AGAIN ?
115
YES
NO
END

FIG.2

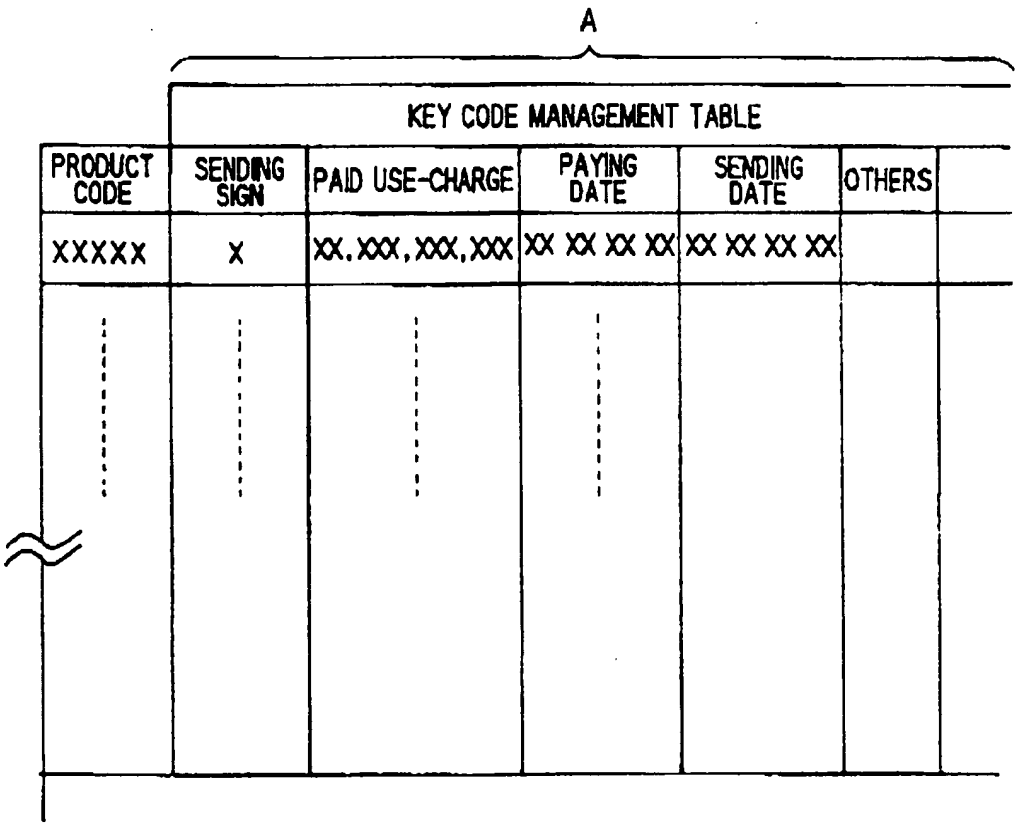

A
KEY CODE MANAGEMENT TABLE
PRODUCT CODE
SENDING SIGN
PAID USE-CHARGE
PAYING DATE
SENDING DATE
OTHERS
XXXXX
X
XX,XXX,XXX,XXX
XX XX XX XX
XX XX XX XX

FIG. 3

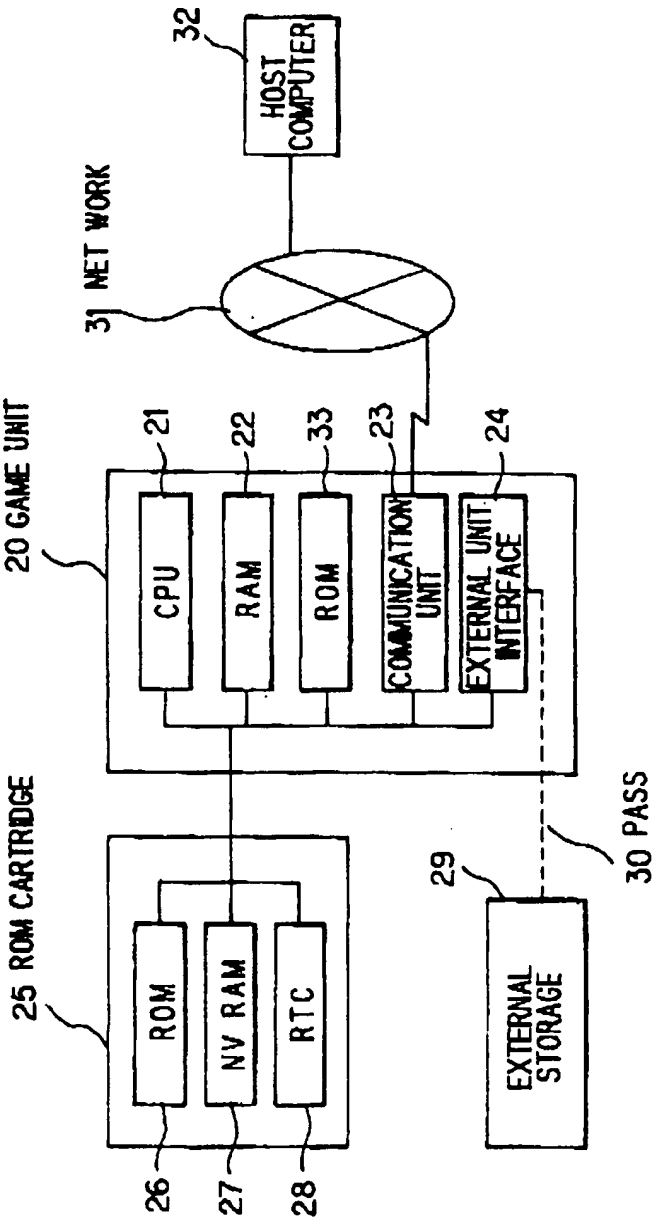

32
HOST COMPUTER
31 NET WORK
20 GAME UNIT
21
22
33
23
24
CPU
RAM
ROM
COMMUNICATION UNIT
EXTERNAL UNIT INTERFACE
25 ROM CARTRIDGE
ROM
NV RAM
RTC
26
27
28
29
EXTERNAL STORAGE
30 PASS

FIG. 4

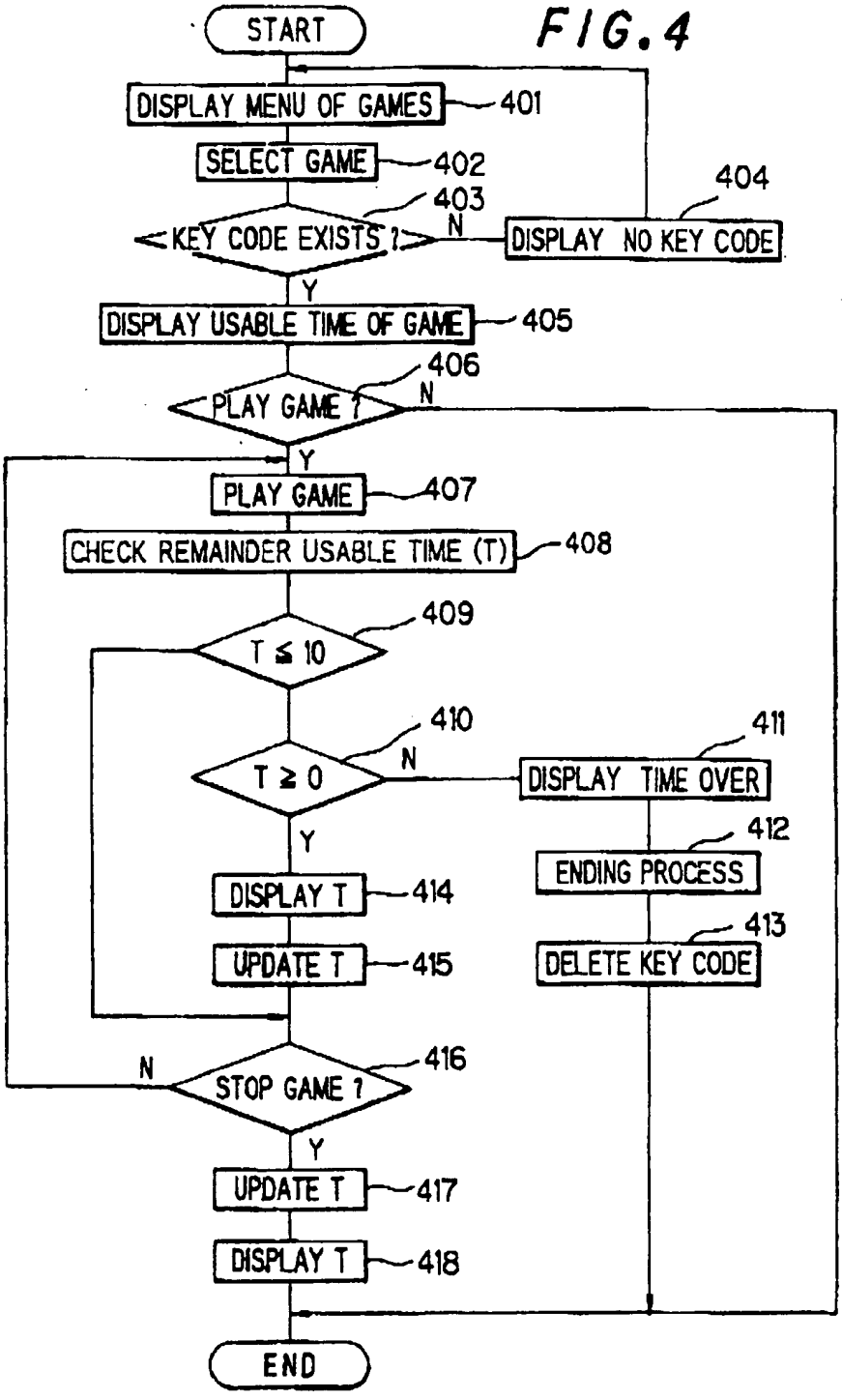
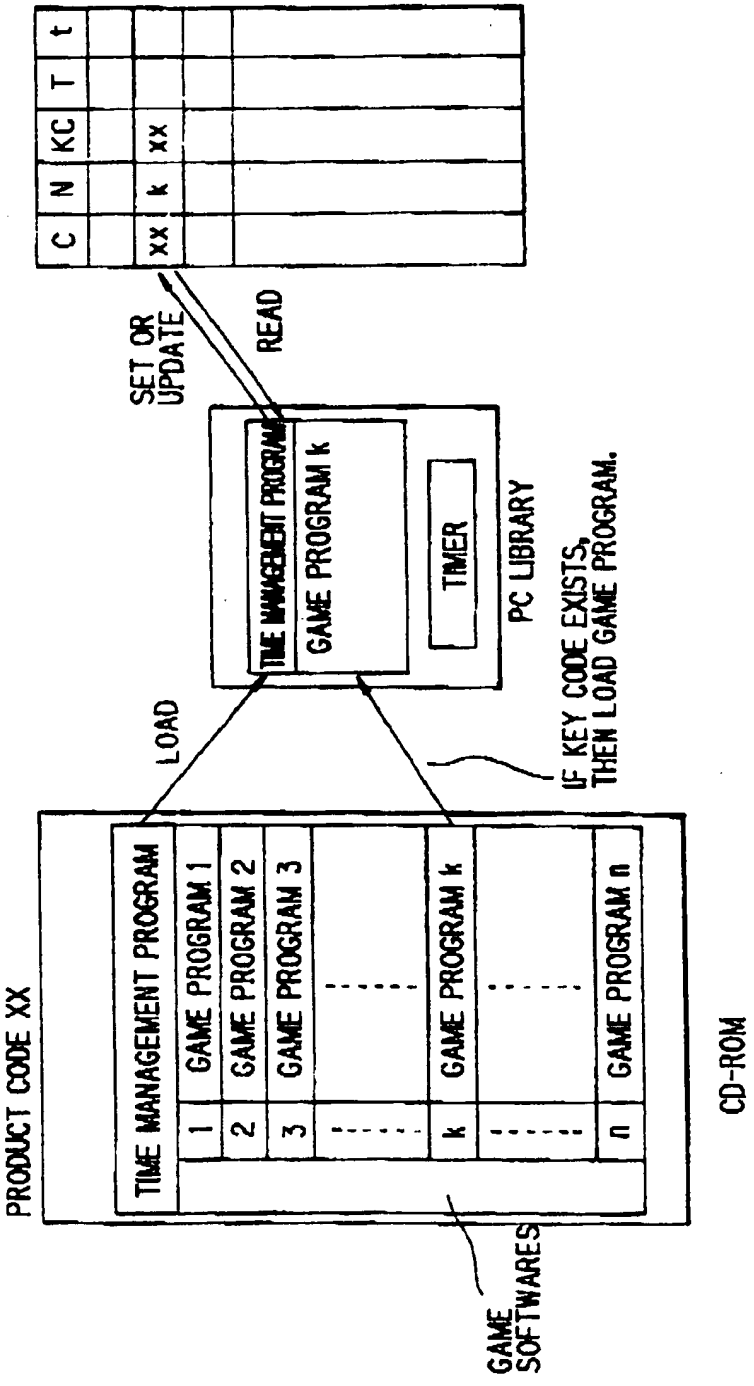

START
DISPLAY MENU OF GAMES
401
SELECT GAME
402
403
KEY CODE EXISTS ?
N
404
DISPLAY NO KEY CODE
Y
DISPLAY USABLE TIME OF GAME
405
406
PLAY GAME ?
N
Y
PLAY GAME
407
CHECK REMAINDER USABLE TIME (T)
408
409
T ≤ 10
410
T ≥ 0
N
411
DISPLAY TIME OVER
Y
412
ENDING PROCESS
DISPLAY T
414
413
UPDATE T
415
DELETE KEY CODE
416
N
STOP GAME ?
Y
UPDATE T
417
DISPLAY T
418
END

FIG.5


C
N
KC
T
t
xx
k
xx
SET OR UPDATE
READ
TIME MANAGEMENT PROGRAM
GAME PROGRAM k
TIMER
PC LIBRARY
LOAD
IF KEY CODE EXISTS, THEN LOAD GAME PROGRAM.
PRODUCT CODE XX
TIME MANAGEMENT PROGRAM
1
GAME PROGRAM 1
2
GAME PROGRAM 2
3
GAME PROGRAM 3
k
GAME PROGRAM k
n
GAME PROGRAM n
CD-ROM
GAME SOFTWARES

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 30 0120

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	EP 0 653 695 A (AT & T CORP) 17 May 1995 * abstract * * column 2, line 10 - line 14 *	1,2	G06F1/00
Y	WO 95 34857 A (SMITH JAMES P ;SMITH EDWARD A (US)) 21 December 1995 * page 6, line 30 - page 7, line 13 *	1,2	
A	US 5 440 631 A (AKIYAMA RYOTA ET AL) 8 August 1995 * column 10, line 8 - line 50 * * column 12, line 36 - line 54; figures 4-6 *	1,3	
A	WO 90 13865 A (SOFTEL INC) 15 November 1990 * page 22, line 15 - line 25 *	1,3	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

G06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	18 April 1997	Durand, J

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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can be calculated by the time/clock function.

A software such as a computer game is provided as data stored in a CD-ROM. In this case, the usable time and the key code of the software is controlled by a time management program which is included in the CD-ROM (the software). FIG. 4 is a flow chart of a process of a time management program. FIG. 5 is a block diagram of a file in a CD-ROM used in FIG. 4.

In FIG. 4, a menu of computer games is displayed on a display unit at the step 401. One of the computer games is selected by an user at the step 402. At the step 403, a key code of the selected computer game is checked. If the key code dose not exist, the message of "NO KEY CODE" is displayed at the step 404, then the step 401 returns. If the key code exists, an usable time of the computer game is displayed on the display unit at the step 405. At the step 406, the user selects whether the computer game is played or not. If the user selects the playing game, the computer game is played at the step 407. During playing the computer game, the remainder usable time is checked on a predetermined cycle at the step 408. At the step 409,if the remainder usable time is more than "10 minutes", the step 416 follows. If the remainder usable time is less than "10 minutes", the step 410 follows. At the step 410, if the remainder usable time is less than "0", the message of "TIME IS OVER" is displayed on the display unit at the step 411. Then, the ending process of the computer game is executed at the step 412. At the ending process, the data of the computer game such as a status of a game character is saved. The key code of the computer game is deleted automatically by the time management program at the step 413. If the remainder usable time is more than "0" at the step 410, the remainder usable time is displayed on the display unit during playing the computer game at the step 414. Next, the remainder usable time is updated at the step 415. The steps 407 to 415 are repeated until the user stops the computer game at the step 416 or the remainder usable time becomes less than "0" at the step 410. If the user stops the computer game at the step 416, the remainder usable time is updated as a new usable time at the step 417. Next, the new usable time is displayed on the display unit at the step 418, then the time management process is ended.

Therefore, a data use-charge and a public network fee can be collected reliably. Further, a software such as a computer game can rent with a term of a lease thereof on a network.

As this invention may be embodied in several forms without departing from the sprit of essential characteristics thereof, the present embodiment is therefore illustrative and not restrictive, since the scope of the invention is defined by the appended claims rather than by the description proceeding them, and all changes that fall within meets and bounds of the claims, or equivalence of such meets and bounds are therefore intended to embraced by the claims.

Claims

1. A method of managing software by transmitted data on a network between a host computer and one or more personal computers the method comprising the steps of:

   loading software into a personal computer, said software including a main program, a communication program for transmitting data on said network between said host computer and said personal computer, and a time managing program for managing the usable time of said main program;
   requesting usable time data and a key code for operating said main program from said personal computer to said host computer by employing said communication program;
   receiving said key code and said usable time data by employing said communication program;
   operating said main program within said usable time by using said key code; and
   managing said usable time of said main program by employing said time managing program.

2. The method of claim 1, wherein said managing step comprises the steps of:

   calculating the remaining usable time; and
   displaying the remaining usable time.

3. The method of claim 2, said managing step further comprising the steps of:

   determining if said remainder of said usable time is less than zero, and, if usable time is less than zero;
   saving data relating to said main program in a storage; and
   deleting said key code of said main program from said personal computer.